

## Description

[Golf grip mounted optical aiming device that improves the clubface or putter face alignment to the target]

### BACKGROUND OF INVENTION

[0001] This invention relates to optical aiming devices and more precisely, optical aiming devices mounted on the grip end of a golf shaft.

[0002] Normally, it is impossible for a golfer to get his eyes, clubface and target all on the same plane while aiming. The golfer is standing above the clubface and target while aiming and cannot be sure that the clubface is perpendicular to the intended target line. This leads to aiming errors that can result in the golf ball moving in an unintended direction after the stroke. By incorporating a optical aiming device in a golf grip during its manufacture or by adding this accessory optical aiming device to an existing golf grip or club shaft, the golfer's eyes, sighting device and target can all be on the same line. The device

makes it possible to align the clubface to the target with a very high degree of accuracy. This device is particularly useful when aiming a putter to a desired target. This device may be used during play or as a practice device to check the player's ability to aim the clubface properly.

[0003] Other aiming devices have been added to golf club grips. These consisted of a hole drilled through the grip to view the target or a small v shaped depression cut into the top of the grip. Both of these methods lacked accuracy and would only work over a limited range. If the target was far from the clubface it could be seen properly, but the accuracy was poor. If the target was too close to the clubface, it could not be seen through the hole and the v depression would not be on the same plain as the target. Other devices utilize a Laser Diode mounted in the grip to help the aiming process. While this should work, it would be considered an artificial device under the rules of golf and could not be used during play.

[0004] This aiming device is very accurate from 1 foot to infinity due to the long parallel aiming lines and clear construction. The angle that the club shaft makes with the ground, while aiming, is of very little importance. It does not need to be perpendicular to the ground to retain its accuracy.

[0005] Since in some form, the device consists of only a clear grip or grip extension, with markings, it should be considered legal for play under the rules of golf.

#### **SUMMARY OF INVENTION**

[0006] Normally, it is impossible for a golfer to get his eyes, clubface and target all on the same plane while aiming. This leads to aiming errors that can result in the golf ball moving in an unintended direction after the stroke.

[0007] To enable proper aiming of the club, the optical aiming device should be mounted on the grip end of the club shaft. The golfer can stand behind the golf club and view the target and aiming device simultaneously. The device uses parallax to display small changes in rotation of the golf grip. The golf club is rotated until the front and rear aiming lines appear centered on the target when viewed from the rear of the grip/aiming device. Aiming devices that have multiple front or rear lines are aimed in a similar fashion. The center aiming line or dimple or notch is held on the target line while the outer aiming lines are centered about the center aiming line or dimple or notch.

[0008] A golfer, using this device, can aim the clubface to target with a very high degree of accuracy.

#### **BRIEF DESCRIPTION OF DRAWINGS**

[0009] Figures:

[0010] Fig. 1 Is a full translucent or transparent grip type optical aiming device showing the clubface aligned to the target as viewed from the rear of the golf club. The front and rear aiming lines appear as one line.

[0011] Fig. 2 Is a full translucent or transparent grip type optical aiming device showing the clubface aligned to the left of target as viewed from the rear of the golf club.

[0012] Fig. 3 Is an accessory type optical aiming device with a square cross section as viewed from the rear.

[0013] Fig. 4 Is an accessory type optical aiming device with a round cross section as viewed from the rear.

[0014] Fig. 5 Is an accessory type optical aiming device with a round cross section, post mounting as viewed from the rear.

[0015] Fig. 6 Is an accessory type optical aiming device, with a square cross section, constructed of a solid opaque material with slots as viewed from the rear.

[0016] Fig. 7 Is a full translucent or transparent grip type optical aiming device with a square cross section and opaque sides on top as viewed from the rear.

[0017] Fig. 8 Is a full translucent or transparent grip type optical aiming device with a round cross section and opaque

sides on top as viewed from the rear.

[0018] Fig. 9 Is an accessory type optical aiming device with a round cross section and insert style mounting as viewed from the rear.

[0019] Fig. 10 Is an accessory type optical aiming device with a square cross section and opaque sides as viewed from the rear.

[0020] Reference Characters:

[0021] 1 Target

[0022] 2 Front aiming line

[0023] 3 Aiming dimple

[0024] 4 Full size translucent or transparent golf club grip, solid or hollow top

[0025] 5 Rear aiming line

[0026] 6 Club shaft

[0027] 7 Translucent or transparent accessory type optical aiming device constructed of hollow tubing or solid stock

[0028] 8 Aiming notch

[0029] 9 Existing golf club grip

[0030] 10 Hollow bottom

- [0031] 11 Post inserted through the grip and bonded to the golf shaft
- [0032] 12 Hole made in the existing golf grip, exposing the golf shaft
- [0033] 13 Front aiming post
- [0034] 14 Side posts
- [0035] 15 Accessory type optical aiming device with a hollow end that fits over the existing grip
- [0036] 16 Full size transparent or translucent golf club grip type optical aiming device with opaque sides
- [0037] 17 Mounting insert bonded to the golf shaft
- [0038] 18 Drilled and tapped holes for aim adjustments
- [0039] 19 Drilled holes for aim adjustments
- [0040] 20 Accessory type optical aiming device with a hollow end that fits over the mounting insert
- [0041] 21 Multiple longitudinal slots
- [0042] 22 Opaque sides

#### **DETAILED DESCRIPTION**

- [0043] The grip type optical aiming device 4 as shown in Figs. 1 and 2 or at least the top of the grip, should be manufac-

tured from a transparent or translucent material so that the front aiming line or lines 2 can be clearly seen while looking through the rear of the grip. The top of the grip type optical aiming device can be solid or hollow. A hollow top may or may not be covered with some sort of transparent cap. The top of the grip type optical aiming device may have a square, rectangular, round or any other cross section as shown in Figs. 7 and 8. Alternately, the grip type optical aiming device 16 could be manufactured with opaque sides 22 as shown in Figs. 7 and 8, a transparent or translucent center and a rear aiming line 5. The grip type optical aiming device should be constructed such that the golf shaft 6 cannot be inserted into the grip to such an extent that it blocks the view of the front aiming line or lines 2 as shown in Fig. 1 and 2.

[0044] The accessory type optical aiming device 7 as shown in Figs. 3,4 and 5 and the accessory type optical aiming device 20 as shown in Fig. 9 should be manufactured from a transparent or translucent material so that the front aiming line or lines 2 can be clearly seen while looking through the rear of the aiming device. The accessory type optical aiming device can be solid or hollow. A hollow top may or may not be covered with some sort of transparent

cap. The top of may have a square, rectangular, round or any other cross section. The bottom 10 as shown in Figs. 3,4 and 9 should be hollow and of the proper diameter so as to snugly fit over the top of a golf grip 9 or insert 17. The device should be held in place by an adhesive or a compression device. The bottom may have multiple longitudinal slots 21as show in Fig. 4 to facilitate this compression. Alternately, the accessory type optical aiming device 7 as shown in Fig. 5 can be secured to the club via a post 11 inserted through a hole 12 made in the grip 9 and bonded to the golf shaft. Alternately, the accessory type optical aiming device 20 as shown in Fig. 9 can be secured to the club via an insert 17 bonded to the club shaft 6. The accessory type optical aiming device can be bonded to the insert 17 or attached to the insert 17 by means of screws utilizing the drilled and tapped holes 18 in the insert 17 and the pre-drilled holes 19 in the accessory optical aiming device 20. These holes should be placed on the insert and accessory type optical aiming device such that the spacing between the center line of each hole increases by a very small amount. This will allow the alignment between the clubface and accessory type optical aiming device to be changed in sub-degree increments



as the two pieces are rotated and different pairs of holes align during assembly.

[0045] Alternately, the accessory type optical aiming device could be manufactured from a solid opaque material, with slots cut in the top, to serve as aiming posts 13 and 14 as shown in Fig. 6. The end 15 should be made hollow to fit over the existing grip 9.

[0046] Alternately, the accessory type optical aiming device could be manufactured with opaque sides 22 a clear center and a rear aiming line 5 as shown in Fig. 10

[0047] Multiple fine lines could be added until aiming could be accomplished via optical interference or Moire patterns displayed as the optical aiming device is rotated (not illustrated).

[0048] During manufacture of all devices, the front aiming line or lines 2 as shown in Figs. 1,2,3,4,5,7,8 and 9 are placed on the part of the device that will be closest to the target 1 when in use. A dimple 3 or notch 8 should be placed on the perimeter of the device to facilitate aiming. It should be centered over a single front aiming line 2 as shown in Figs. 1,2,4,5 and 9 or centered between multiple front aiming lines 2 as shown in Figs. 3,7 and 8). The rear aiming line or lines 5 as shown in Fig. 1,2,3,4,5,7,8 and 9 are

placed on the part of the grip farthest away from the target when in use. The grip and the accessory optical aiming device are both used in the same manner. To aim the clubface at a target 1 as shown in Fig. 1 and 2, the player centers the clubface directly behind the ball and centers the front aiming line 2, or dimple 3 or notch 8 on the desired target 1. The player then rotates the club shaft until the rear aiming line 5 covers the front aiming line 2 as shown in Fig. 1. The clubface is now aiming at the target. Fig. 2 illustrates a clubface that is not properly aimed to the target. The rear aiming line 5 is to the right of the front aiming line 2, indicating the clubface is pointing to the left of the target.

[0049] Alternately Fig, 9, there could be one front aiming line 2 and two rear lines 5 as shown in Fig. 3. The clubface is aimed properly when the front line is centered on the target 1 and centered between the two rear lines. The width of the lines may be such that little or no light would pass through the grip or accessory aiming device when the clubface is aimed towards the target. The positions of the front and rear lines could be reversed if desired.

[0050] Alternately, the grip type optical aiming device 16 could be manufactured with opaque sides 22, a clear center and

a rear aiming line 5 as shown in Figs. 7 and 8.

[0051] The device uses parallax to display small changes in rotation of the clubface. During the installation of the grip type optical aiming device onto the golf shaft 6 as shown in Figs. 1,2,7 and 8 or during the installation of the accessory type optical aiming device onto the existing grip 9 as shown in Figs. 3,4 and 6 or into a hole made in grip 12 as shown in Fig 5 or onto the insert bonded to the club shaft 17 as shown in Fig.9 , the clubface and club shaft should held perpendicular to a line drawn from the target to center of the clubface. For highest accuracy this target should be at least 10 feet away. Keeping the clubface and club shaft perpendicular, the grip or accessory aiming device is then rotated until the front and rear aiming line appear centered on the target when viewed from the rear of the grip or accessory aiming device. The accessory aiming device should then be permanently attached to the existing grip, golf shaft or insert in such a way as to prevent movement. Screws, adhesive or a compression device can be used for this purpose. The grip style optical aiming device should be allowed to set so that it will not move in the future. When the clubface is pointed to the target, the front and rear aiming lines will now appear to be centered

on every point of the target line. Aiming devices that have multiple front or rear lines are aimed in a similar fashion. The center aiming line is held on the target line while the outer aiming lines are centered about the center aiming line.